# Chapter 16.26
# FLOODPLAINS

Sections:



## 16.26.010 Purpose.

It is the purpose of this chapter to promote the public health, safety, and general welfare; reduce the annual cost of flood insurance; and minimize public and private losses due to flood conditions in specific areas by provisions designed:

A. To protect human life and health;

B. To minimize expenditure of public money and costly flood control projects;

C. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

D. To minimize prolonged business interruptions;

E. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, and bridges located in special flood hazard areas;

F. To help maintain a stable tax base by providing for the sound use and development of special flood hazard areas so as to minimize future flood blight areas;

G. To ensure that those who occupy the special flood hazard areas assume responsibility for their actions. (Ord. 1301 § 5, 2009).

## 16.26.015 Methods of reducing flood losses.

In order to accomplish its purposes, this chapter includes methods and provisions for:

A. Restricting or prohibiting uses that are dangerous to health, safety, and property due to water or erosion hazards, or result in damaging increases in erosion or in flood heights or velocities;

B. Requiring that uses vulnerable to floods, including facilities that serve such uses, be protected against flood damage at the time of initial construction;

C. Controlling the alteration of natural flood plains, stream channels, and natural protective barriers which help to accommodate or channel flood waters;

D. Controlling filling, grading, dredging, and other development that may increase flood damage; and

E. Preventing or regulating the construction of flood barriers that unnaturally divert floodwaters or may increase flood hazards in other areas. (Ord. 1301 § 5, 2009).

### 16.26.020 Definitions.

Unless specifically defined below, terms or phrases used in this chapter shall be interpreted so as to give them the meaning they have in common use and to give this chapter its most reasonable application.

“Appeal” means a request for a review of the interpretation of any provision of this chapter or a request for a floodplain variance.

“Base flood” means the flood having a one percent chance of being equaled or exceeded in any given year, and is also referred to as the “100-year flood.” Base flood is designated on Flood Insurance Rate Maps by the letters A or V.

“Base flood elevation” or “BFE” means the elevation of the base flood as designated on the Flood Insurance Rate Maps or as ascertained by the local administrator.

“Basement” means any area of the building having its floor sub-grade, or below ground level, on all sides; provided, that below-grade crawlspace construction that is in accordance with the requirements of this chapter will not be considered basements.

“Breakaway wall” means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces without causing damage to the elevated portion of the building or supporting foundation system.

“Critical facility” means a facility for which even a slight chance of flooding might be too great. Critical facilities include, but are not limited to, schools, nursing homes, hospitals, police, fire and emergency response installations, and installations that produce, use, or store hazardous materials or hazardous waste.

“Development” means any manmade change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials located within the special flood hazard area.

“Elevated building” means, for insurance purposes, a nonbasement building that has its lowest elevated floor raised above ground level by foundation walls, shear walls, post, piers, pilings, or columns.

“Elevation certificate” means the official form (FEMA Form 81-31) used to track development, provide elevation information necessary to ensure compliance with community floodplain management, and determine the proper insurance premium rate with Section B completed by community officials.

“Existing manufactured home park or subdivision” means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed is completed before the effective date of the adopted floodplain management regulations; including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads.

“Expansion to an existing manufactured home park or subdivision” means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed, including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads.

“Flood” or “flooding” means a general and temporary condition of partial or complete inundation of normally dry land areas from:

1. The overflow of inland or tidal waters; and/or

2. The unusual and rapid accumulation of runoff of surface waters from any source.

“Flood Insurance Rate Map (FIRM)” means the official map on which the Federal Insurance Administration has delineated both the special flood hazards areas and the risk premium zones applicable to the community.

“Flood Insurance Study (FIS)” means the official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Insurance Rate Maps, and the water surface elevation of the base flood.

“Floodproofing” means the construction techniques that prevent or provide resistance to damage from flooding while allowing water to enter the structure.

“Floodway” means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.

“Local administrator” means the director of planning and community development or designee.

“Lowest floor” means the lowest floor of the lowest enclosed area, including the basement. An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access, or storage in an area other than a basement area, is not considered a building’s lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable nonelevation design requirements of this chapter found at BLMC 16.26.060(F)(1)(b), specifically provided adequate flood ventilation openings exist.

“Manufactured home” means a structure, transportable in one or more sections, that is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term “manufactured home” does not include a recreational vehicle.

“Manufactured home park or subdivision” means a parcel or contiguous parcels of land divided into two or more manufactured home lots for rent or sale.

“Mean sea level” means the arithmetic mean of hourly heights of the sea observed over a 19-year period. This gives the 0.0 datum point given in the North American Vertical Datum of 1988 (NAVD-88).

“New construction” means structures for which the start of construction commenced on or after the effective date of this chapter.

“New manufactured home park or subdivision” means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed is completed on or after the effective date of adopted floodplain management regulations; including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads.

“Recreational vehicle” means a vehicle:

1. Built on a single chassis;

2. Four hundred square feet or less when measured at the largest horizontal projection;

3. Designed to be self-propelled or permanently towable by a light duty truck; and

4. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

“Special flood hazard area” means the land in the flood plain within a community subject to a one percent or greater chance of flooding in any given year. Designation on maps always includes the letters A or V.

“Start of construction” includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, placement or other improvement was within 180 days of the permit date. In relation to this term:

1. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation.

2. Permanent construction includes neither land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure.

3. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

“Structure” means a walled and roofed building, including a gas or liquid storage tank that is principally above ground.

“Substantial damage” means damage of any origin sustained by a structure for which the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

“Substantial improvement” means any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure either:

1. Before the improvement or repair is started; or

2. If the structure has been damaged and is being restored, before the damage occurred. For the purposes of this definition “substantial improvement” is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure.

The term excludes:

a. Any project for improvement of a structure to correct violations of state or local health, sanitary, or safety code specifications that were previously identified by the local code enforcement official and are the minimum necessary to assure safe living conditions; or

b. Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places.

“Variance” means a grant of relief from the requirements of this chapter that permits construction in a manner that would otherwise be prohibited by this chapter. (Ord. 1301 § 5, 2009).

### 16.26.030 General provisions.

A. Lands to Which This Chapter Applies. This chapter shall apply to all special flood hazards areas within the jurisdiction of the city of Bonney Lake.

B. Basis for Establishing Special Flood Hazard Areas. The special flood hazard areas identified by the Federal Insurance Administration in a scientific and engineering report entitled “The Flood Insurance Study for the City of Bonney Lake” dated November, 1979, and any subsequent revisions, with an accompanying Flood Insurance Rate Map (FIRM), and any subsequent revisions, are adopted by reference and declared to be a part of this chapter. The Flood Insurance Study and the FIRM are on file at the office of the city clerk. The best available information for flood hazard area identification as outlined in BLMC 16.26.040(D) shall be the basis for regulation until a new FIRM is issued that incorporates data utilized under that section.

C. Penalties for Noncompliance. No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this chapter and other applicable regulations. Violations of the provisions of this chapter by failure to comply with any of its requirements shall constitute a misdemeanor, punishable in accordance with Chapter 1.16 BLMC, including violations of conditions and safeguards established in connection with conditions. Nothing shall prevent the city from taking such other lawful action as is necessary to prevent or remedy any violation.

D. Abrogation and Greater Restrictions. This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this chapter and another, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

E. Interpretation. In the interpretation and application of this chapter, all provisions shall be:

1. Considered as minimum requirements;

2. Liberally construed in favor of the governing body; and

3. Deemed neither to limit nor repeal any other powers granted under state statutes.

F. Warning and Disclaimer of Liability. The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This chapter does not imply that land outside the special flood hazards areas or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the city, any officer or employee of the city, or the Federal Insurance Administration, for any flood damages that result from reliance on this chapter or any administrative decision lawfully made in accordance with this chapter. (Ord. 1301 § 5, 2009).

### 16.26.040 Administration.

A. Development Permit Required. A development permit shall be obtained before construction or development begins within any special flood hazard area established in BLMC 16.26.030(B). The permit shall be for all structures including manufactured homes, as set forth in BLMC 16.26.020, Definitions, and for all development including fill and other activities.

B. Application for Development Permit. Application for a development permit shall be made on forms furnished by the city and may include, but not be limited to, plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities, and the location of the foregoing. Specifically, the following information is required:

1. Elevation in relation to mean sea level, of the lowest floor of all structures shown on a current elevation certificate, including the basement;

2. Elevation in relation to mean sea level to which any structure has been floodproofed;

3. Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet floodproofing criteria in BLMC 16.26.060(F)(2);

4. Description of the extent to which a watercourse will be altered or relocated as a result of proposed development;

5. Biological assessment or consultation as required under the Endangered Species Act.

C. The local administrator is appointed to administer and implement this chapter by granting or denying development permit applications in accordance with its provisions.

1. Duties and Responsibilities of the Local Administrator. Duties of the local administrator or designee shall include, but not be limited to:

2. Permit Review.

a. Review all development permits to determine that the permit requirements of this chapter have been satisfied.

b. Review all development permits to determine that all necessary permits have been obtained from those federal, state, or local governmental agencies from which prior approval is required.

c. Review all development permits to determine if the proposed development is located in the floodway. If located in the floodway, assure that the encroachment provisions of BLMC 16.26.060(H)(1) are met.

D. Use of Other Base flood Data (In A and V Zones). When base flood elevation data has not been provided (in A or V Zones) in accordance with BLMC 16.26.030(B), Basis for Establishing Special Flood Hazard Areas, the local administrator shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal, state or other source, in order to administer BLMC 16.26.060(F), Specific Standards, and BLMC 16.26.060(H), Floodways.

E. Information to Be Obtained and Maintained.

1. Where base flood elevation data is provided through the Flood Insurance Study, FIRM, or required as in subsection D of this section, obtain and record the actual as-built elevation in relation to mean sea level of the lowest floor, including the basement, of all new or substantially improved structures, and whether or not the structure contains a basement.

2. For all new or substantially improved floodproofed nonresidential structures where base flood elevation data is provided through the FIS, FIRM, or as required in subsection D of this section:

a. Obtain and record the elevation in relation to mean sea level to which the structure was floodproofed.

b. Maintain the floodproofing certifications required in subsection (B)(3) of this section.

3. Maintain for public inspection all records pertaining to the provisions of this chapter.

F. Alteration of Watercourses

1. Notify adjacent communities and the Department of Ecology prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration.

2. Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.

G. Interpretation of FIRM Boundaries. Make interpretations where needed, as to exact location of the boundaries of special flood hazards areas, specifically where there appears to be a conflict between a mapped boundary and actual field conditions. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation. Such appeals shall be granted consistent with the standards of Section 60.6 of the Rules and Regulations of the National Flood Insurance Program (44 CFR 59-76). (Ord. 1301 § 5, 2009).

### 16.26.050 Floodplain variances.

A. Generally, the only condition under which a variance from the elevation standard may be issued is for new construction and substantial improvements to be erected on a small or irregularly shaped lot contiguous to and surrounded by lots with existing structures constructed below the base flood level. As the lot size increases the technical justification required for issuing the variance increases. A floodplain variance is a Type 2 or 3 permit.

B. Variances shall not be issued within a designated floodway if any increase in flood levels during the base flood discharge would result.

C. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

D. Variances shall only be issued upon:

1. A showing of good and sufficient cause;

2. A determination that failure to grant the variance would result in exceptional hardship to the applicant;

3. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances;

4. A favorable biological assessment or consultation as required under the Endangered Species Act.

E. Variances as interpreted in the National Flood Insurance Program are based on the general zoning law principle that they pertain to a physical piece of property; they are not personal in nature and do not pertain to the structure, its inhabitants, economic or financial circumstances. They primarily address small lots in densely populated residential neighborhoods. As such, variances from flood elevations should be quite rare.

F. Variances may be issued for nonresidential buildings in very limited circumstances to allow a lesser degree of floodproofing than watertight or dry-floodproofing, where it can be determined that such action will have low damage potential, complies with all other variance criteria except subsection (B) of this section, and otherwise complies with BLMC 16.26.060(A), (C) and (D), general standards.

G. Any applicant to whom a variance is granted shall be given written notice that the permitted structure will be built with its lowest floor below the base flood elevation. (Ord. 1301 § 5, 2009).

### 16.26.060 General standards for flood hazard reduction.

In all special flood hazards areas, the following standards are required:

A. Anchoring.

1. All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.

2. All manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors.

B. Construction Materials and Methods.

1. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

2. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.

3. Electrical, heating, ventilation, plumbing, and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

C. Utilities.

1. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems;

2. Water wells shall be located on high ground that is not in the floodway;

3. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters; and

4. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

D. Subdivision and Multifamily Proposals.

1. All subdivision proposals shall be consistent with the need to minimize flood damage;

2. All subdivision proposals shall have public utilities and facilities, such as sewer, gas, electrical, and water systems located and constructed to minimize or eliminate flood damage;

3. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage;

4. Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals and other proposed developments that contain at least 50 lots or five acres, whichever is less;

5. Density calculations shall not include floodways or special flood hazard areas.

E. Review of Building Permits. Where elevation data is not available either through the Flood Insurance Study, FIRM, or from another authoritative source (BLMC 16.26.040(D)), applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available.

F. Specific Standards. In all special flood hazards areas where base flood elevation data has been provided as set forth in BLMC 16.26.030(B), Basis for Establishing Special Flood Hazard Areas, or BLMC 16.26.040(D), Use of Other Base Flood Data, the following criteria apply:

1. Residential Construction.

a. New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated one foot or more above the base flood elevation (BFE).

b. Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:

i. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.

ii. The bottom of all openings shall be no higher than one foot above grade.

iii. Openings may be equipped with screens, louvers, or other coverings or devices; provided, that they permit the automatic entry and exit of floodwaters.

2. Nonresidential Construction. New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated one foot or more above the base flood elevation; or, together with attendant utility and sanitary facilities, shall:

a. Be floodproofed so that below one foot or more above the base flood level the structure is watertight with walls substantially impermeable to the passage of water;

b. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;

c. Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting

provisions of this subsection based on their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the official as set forth in BLMC 16.26.040(E)(2);

d. Nonresidential structures that are elevated, not floodproofed, must meet the same standards for space below the lowest floor as described in subsection (F)(1)(b) of this section.

3. Manufactured Homes. All manufactured homes in the floodplain to be placed or substantially improved on sites shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated one foot or more above the base flood elevation and is securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement.

4. Recreational Vehicles. Recreational vehicles placed on sites are required to either:

a. Be on the site for fewer than 180 consecutive days;

b. Be fully licensed and ready for highway use, on wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and have no permanently attached additions; or

c. Meet the requirements of subsection (F)(3) of this section and the elevation and anchoring requirements for manufactured homes.

G. AE and A1 – A30 Zones with Base Flood Elevations But No Floodways. In areas with base flood elevations, but a regulatory floodway is not designated, no new construction, substantial improvements, fill, or other development shall be permitted within Zones A1 – A30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

H. Floodways (Also See Chapter 86.16 RCW). Located within special flood hazard areas established in BLMC 16.26.030(B) are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters that can carry debris, and increase erosion potential, the following provisions apply:

1. Encroachments are prohibited. This includes fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels during the occurrence of the base flood discharge.

2. Construction or reconstruction of residential structures is prohibited within designated floodways, except for:

a. Repairs, reconstruction, or improvements to a structure that do not increase the ground floor area; and

b. Repairs, reconstruction or improvements to a structure, the cost of which does not exceed 50 percent of the market value of the structure either:

i. Before the repair or reconstruction is started; or

ii. If the structure has been damaged, and is being restored, before the damage occurred. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications identified by the local code enforcement official and are the minimum necessary to assure safe living conditions, or to structures identified as historic places, may be excluded in the 50 percent.

3. If subsection (H)(1) of this section is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this section, provisions for flood hazard reduction. (Ord. 1301 § 5, 2009).

### 16.26.070 Critical facility.

Construction of new critical facilities shall be, to the extent possible, located outside the limits of the special flood hazard area (SFHA, also called the 100-year floodplain). Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet above BFE or to the height of the 500-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities to the extent possible. (Ord. 1301 § 5, 2009).

### 16.26.080 Requirements for below-grade crawlspaces.

Below-grade crawlspaces are allowed if, in addition to the above requirements, the following requirements are met:

A. The interior grade of a crawlspace below the BFE must not be more than two feet below the lowest adjacent exterior grade (LAG), shown as D in Figure 3 of Bulletin 11-01.

B. The height of the below-grade crawlspace, measured from the interior grade of the crawlspace to the top of the crawlspace foundation wall must not exceed four feet at any point; this is illustrated and shown as L in Figure 3. The height limitation is the maximum allowable unsupported wall height according to the engineering analyses and building code requirements for flood hazard areas. Also see the section Guidance for Pre-Engineered Crawlspaces on page 7 of this Bulletin 11-01.

C. Adequate drainage must be supplied that removes floodwaters from the interior areas of the crawlspace. The enclosed area should be drained within a reasonable time after a flood event. The type of drainage system will vary because of the site gradient and other drainage characteristics, such as soil types. Possible options include natural drainage through porous, well-drained soils and drainage systems such as perforated pipes, drainage tiles, or gravel or crushed stone drainage by gravity or mechanical means.

D. The velocity of floodwaters at the site should not exceed five feet per second for any crawlspace. For velocities in excess of five feet per second, other foundation types should be used. (Ord. 1301 § 5, 2009).